South Dayton Dump and Landfill – OU1 Phase 1B/2A WP – Ohio EPA Comments

October 2013

1. The purpose of the Groundwater and Data Gap WP was to collect sufficient information for developing a remedy evaluation and decision. To develop a remedy evaluation and decision, it was determined in the Phase 1A WP that "additional information regarding the sources of contamination, and the potential for contaminated groundwater and landfill gas to migrate off Site is required."

   Two of the goals of the Groundwater and Data Gap WP were to "Determine if contaminated groundwater is migrating off-Site" and "determine where contaminated groundwater is migrating from the landfill."

   In the OU1 Phase 1A WP, the goals of Phase 2A are stated and include: "VAS investigation to: 1) delineate the vertical extent of known areas of groundwater contamination identified during the Phase 1A and Phase 1B investigations, 2) determine the intervals of greatest contaminant concentrations, and 3) determine where contaminated groundwater is migrating from the landfill.

   Efforts have been made to investigate data gaps in Phase 1A and the Phase 1B/ 2A WP has proposed monitoring wells and VAS in those data gap areas. However, insufficient information has been provided to determine whether the ground water sampling and analysis proposed is sufficient to determine if/where contaminated ground water is migrating off of OU1.

   a. To add clarity and purpose to the text, Ohio EPA recommends that the purpose and goals of Phase 1B and 2A work be re-stated from the Phase 1A WP. A discussion of how the proposed monitoring wells and VAS will satisfy the purpose and meet each goal of the phase is needed.

   b. In order to justify location and placement of each proposed monitoring well and VAS location, Ohio EPA recommends that the proposal be modified to base location on a discussion of constituent of concern distribution (spatial trend) and predominant ground water flow path. The inclusion of shaded relief maps for the dominant constituents of concern is recommended to support discussion.

   c. Ohio EPA recommends that the proposed monitoring well screen lengths and depths be justified to ensure that well screens remain fully submerged.

d. Ohio EPA recommends that the proposal be modified to specify a sample frequency for each proposed monitoring well.

e. Ohio EPA recommends that the proposal be modified to clarify the intended use of each proposed monitoring well and VAS location. In addressing intended use, explanation should be provided as to whether the sample location is intended for monitoring potential source area, migration path, or downgradient extent.

2. The purpose of sampling in the proposed phased approaches seems to be geared only to investigating data gap areas. Samples and proposed samples should be related to flow conditions and should consider the entire of OU1 as a possible source of contaminants to ground water and soil vapors. A comprehensive model is needed to determine where contaminated ground water and vapors are leaving OU1.

a. Ohio EPA recommends that results from the Phase 1A work be compared to previous information gathered during the RI. This type of comparison would aid in ensuring that the new data is succeeding in meeting the overall goal of providing "additional data with respect to sources, nature, and extent of contamination that will ultimately be used to determine the most appropriate groundwater containment or mitigation option for OU1."

b. Figures should address known ground water flow paths and should include shaded relief maps in the different aquifer zones for the dominant constituents of concern. Such information would help to create a conceptual model to aid in the placement of future monitoring wells and VAS.

c. Many of the conclusions in the Phase 1B/2A WP state that contamination is not an issue based on Phase 1A results. To be sure data gap areas are completely delineated, the new data from Phase 1A should be compared to data gathered during the RI so that such areas can be successfully laid to rest.

d. In order to justify placement of proposed VAS locations and monitoring wells, Ohio EPA recommends that the proposal be modified to address historic VAS and monitoring well results. For example, in regards to Area 6, consideration should be given to historic results from VAS-9, in addition to considering the distribution Phase 1A borehole results. Vertical Aquifer Sample 9 (VAS-9) is significant because the highest concentration of trichlroethene was detected in this location at 5,100 ug/L, at a shallow depth of 27 to 32 feet bgs (Nov. 2008).

e. In order to meet the intended objective of providing "additional data with respect to sources, nature, and extent of contamination that will that will ultimately be used to determine the most appropriate groundwater containment or mitigation options for OU1" Ohio EPA recommends that the proposal be modified to propose a sampling schedule that includes not only constituents of concern, but also major cations and anions, indicator parameters (pH, temperature,

conductivity, oxidation reduction potential, and dissolved oxygen), and the following REDOX sensitive parameters: nitrate, manganese, iron, and sulfate. Interpretation of these parameters spatially and temporally will address migration stability and assist evaluation of alternatives in the FS.

3. A discussion of the data gathered during Phase 1A has not been provided and conclusions have not been given for all areas investigated. Ohio EPA recommends that the results and conclusions sections of the WP be combined and expanded upon to provide a better connection between the data gathered and next steps forward. The table that presents the proposed monitoring wells and VAS locations is helpful; however, it is not a substitute for textual discussion and conclusions.

    a. Area 4, Area 5, and Area 6 – Ohio EPA recommends the proposal be modified to discuss the clear spatial trend between trichloroethene and vinyl chloride between adjacent Areas 4, 5, and 6. Trichloroethene and vinyl chloride appear elongated in chlorinated solvent plume, with a longitudinal axis parallel with previous delineations of southerly flow. An important distinction that should be considered in the proposal is that dominance of trichlorethene and near absence of vinyl chloride in upgradient Areas 4 and 5, compared to the dominance of vinyl chloride in downgradient Area 6.

    b. MW-210 Area – Ohio EPA recommends the proposal be modified to discuss the dominance of trichloroethene, and absence of cis-1,2-dichlorothene, 1,1-dichloroethene, and vinyl chloride in the MW-210 area (Figure 4).

    c. In Area 3, soil samples were collected and a plume of free phase LNAPL was delineated. While the area of free phase liquid product has been determined, no effort has been presented to sample the material and determine its makeup. Ohio EPA recommends that further information be provided on this area, consider a rational for further investigating the LNAPL, or provide reasoning as to why this area warrants no further action.

4. Only shallow ground water wells have been proposed during Phase 1B – please explain the reasoning for only shallow ground water wells. Are wells to investigate threats for VI? Or to aid in monitoring ground water within OU1 for contamination and possible contamination leaving the site?

5. Sample concentrations from historic and Phase 1A work are inconsistently compared to screening levels within the WP. Please accurately and consistently compare sample concentrations to screening levels and note when concentrations are above standards.

6. Highest sample concentrations are sometimes given for Phase 1A work and sometimes for historic work. Please provide highest concentrations for Phase 1A work and discuss how such concentrations compare to historic highs in similar areas.

7. One group of COCs for the SDD&L site is PCBs. PCBs were investigated for in every fourth soil and ground water sample within data gap areas 1 and 5. Results provided in the Phase 1B/2A WP suggest that PCBs were not detected in ground water samples; however, in all ground water samples, the sample quantitation limit was above the tap water screening level. In instances where the SQL is elevated above the SL, <SQL should be identified.

8. One goal of Phase 1A was to investigate data gap areas with test trenches. In 2000, a drum containing benzene, PCBs, lead, and naphthalene above leach based standards was uncovered in TT-21 on the Valley Asphalt property. Another drum removal took place in this area on Valley Asphalt, information on the number of drums and their contents needs to be added to complete the discussion. One goal of the test trench investigation was to conduct TT-24 on the Valley Asphalt property, near TT-21, to try and determine the source of geophysical anomalies that may involve drums. TT- 24 was not conducted due to the presence of an asphalt pile. No discussion has been provided regarding returning/not needing to return to TT-24. In addition, BH41 and 45 were not completed within Area 1 and no discussion of re-visiting the area has been discussed.

   a. Because TT-24 and BH41 and 45 were not completed, it is not correct to state that the goals of Phase 1A have been completed regarding area 1.

   b. Page 3 of the OU1 Phase 1B/2A WP states, "based on the analytical results of Phase 1A soil and ground water investigation in Area 1, there is no significant contamination remaining from the former presence of the drum in TT-21."

      i. One soil bore was sampled for PCBs in the area near TT-21

      ii. Two shallow ground water samples were analyzed for PCBs in this area (BH 36 and 40)

      Ohio EPA requests that further information and discussion be provided on whether or not we can accurately conclude that the buried drums on Valley Asphalt are no longer a data gap and do not warrant further investigation.